

光学试题 答案及评分 (评分可由阅卷人适度调整)

1. $I = I_0 e^{-\alpha l} = I_0 e^{-0.1 \times 40} = I_0 e^{-4}$
电子质量 kg 光子初速, m/s

2. $W = \frac{1}{2} m v_0^2 + A = e V_0 + A$
逸出电子动能 (J) 电子电荷 C 逸出功, J 遏止电位, V (伏特)

3. $\frac{1}{\lambda} = \frac{1}{\lambda_0} \pm \omega_j$, $\lambda = 4654.7 \text{ \AA}$ 反斯托克斯线
 $\lambda = 5128.3 \text{ \AA}$
 4688
 4289

4. 3. $N = 2 \times 10^{16} / 1 \times 10^{-6} = 2 \times 10^{22} \text{ g}$
 (1) 来自于一级, (2) 滴出新条纹
 5. (a) $\frac{2\pi}{\lambda} d \cos \theta_k = 2\pi k$, $\cos \theta_k = \frac{k\lambda}{2d}$

$\theta_k = \cos^{-1} \frac{k\lambda}{2d}$
 $\sin \theta_k = \sqrt{1 - \left(\frac{k\lambda}{2d}\right)^2}$